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PAGE

Unrest in Greece Hits Four Northern Areas 3
Caribbean Isles View Peacetime Maneuvers 5
National Park Series: No. 23. Olympic 7
New Opal Field Adds to Australia's Wealth 9
Sports Have Influenced England's Victories 11

EXPLORATION P. S.

JUNIOR BOBBY-SOXERS OF CHARLOTTE AMALIE PROVIDE CHORUS PLUS ACCOMPANIMENT

These little Tomians (as residents of the island of St. Thomas are called) represent the two-thirds of the Virgin Islanders who live in towns, the 91 per cent who are colored, and the 98 per cent who are literate. Education is compulsory. On the island of St. Thomas there are seven public elementary schools, and a number of schools connected with the churches of the Protestant, Roman Catholic, and Jewish groups of its citizens. These small choristers wear clothes like their fellow Americans on the mainland, and they sing the same songs. They could be singing "My Darling Clementine" or "Zip-a-Dee-Doo-Dah," and the only foreign note is the gypsy tambourines. The islanders are emphatic about including "of the United States" as part of their official name (page 5).

Unrest in Greece Hits Four Northern Areas

THE recent unrest which has engulfed Greece centered for months along its northern border. Four areas steeped in ancient history—Thrace, Macedonia, Epirus, and Thessaly—have experienced much of the actual fighting between monarchists and rebels.

Thrace, Macedonia, and Epirus, as generally outlined, are not all in Greece. They spread from east to west along Greece's 500-mile northern frontier—a predominantly wild and mountainous border. Thrace, forming part of the kingdom's northeastern panhandle along the Aegean Sea, extends eastward into European Turkey and northward into Bulgaria. Macedonia's vague northern limits lie within Yugoslavia and Bulgaria. Epirus, on the west, reaches into Albania.

Turkish Tobacco Raised in Greek Thrace

Thrace and Macedonia, which expanded and contracted through centuries of military and economic pressure, lay on an ancient east-west path of conquest. Thrace was invaded by Darius, Xerxes, and Philip of Macedon before falling to the legions of Rome. The Goths and the Huns had their turns before it fell, with the other Balkan states, before the irresistible power of the Ottoman Turks.

In Greek Thrace, farmers grow "Turkish" tobacco on the lowlands between the forested Rhodope mountain slopes and the Aegean Sea. Komotinē and Xanthē are inland cities, each with more than 30,000 people. Alexandroupolis (Dede Agach) is the chief Thracian port. Forty miles westward, undeveloped Porto Lagos is sought by Bulgaria to give it an outlet on the Aegean.

Countering Bulgaria's bid for portions of Greek Thrace and Macedonia is the Greek claim on Bulgaria's Macedonian (southwest) corner as far as the main ridge of the Rhodope Mountains. Many Greeks consider these mountains the natural line of defense for their second city, Salonika (Thessalonikē), at the head of the Gulf of Salonika.

Macedonia (illustration, page 4), lying north from Salonika and extending from the Rhodopes on the east to the Pindus Mountains on the west, was the hub of the world-conquering empire of Alexander the Great. Its Vardar and Struma river valleys, natural routes from Belgrade and Sofia to the Aegean, were scenes of some of the bitterest battles of World War I.

Epirus Scene of Original "Pyrrhic Victory"

East of the Struma, Sérrai and Dráma are farm centers of 35,000 people, each with small manufacturing sections. Part of their output is shipped through the near-by port of Kaválla. In western Macedonia, rebels have operated from the mountains near the Yugoslav border and north of Mt. Olympus, home of ancient Greek gods.

Westward, across the Pindus Mountains, home of peaceful, nomadic Vlach shepherds, is Epirus, on the Ionian Sea coast. It was the realm of King Pyrrhus, whose costly conquest in one battle with the Romans was

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UMI

B. ANTHONY STEWART

A TINY STREAM COURSES DOWN A STREET IN ARÁKHOVA, A VILLAGE OF STONE NEAR ANCIENT DELPHI IN CENTRAL GREECE (page 3)

Caribbean Isles View Peacetime Maneuvers

THE oldest New World city under the American flag and a near-by island capital (almost as ancient) that is seldom called by its right name were in the arena of the recent maneuvers of the Atlantic Fleet—the largest peacetime operations ever held in the Atlantic.

They are San Juan, capital of Puerto Rico, and Charlotte Amalie, capital of the Virgin Islands of the United States. Only 78 miles apart at the northeastern elbow of the Antilles sweep of islands, they gained importance as centers of hemisphere defense in World War II.

San Juan, Like New York, Has Overgrown Its Island

San Juan is half a century older than St. Augustine, Florida, the oldest city in continental United States. With a population of 186,000, San Juan is second only to Havana among the cities of the Caribbean. It was founded by Juan Ponce de León, first governor of the island, and officially became the capital in 1521. In that same year, its founder sailed for the mainland to take up his quest for the Fountain of Youth.

San Juan, like New York City, was established on a small island, filled every square foot, and overflowed onto adjoining land. Like New York, it is connected with the mainland by a number of bridges.

Standing on the sea wall at the harbor entrance is La Fortaleza, begun in 1529 as a fortress. It has been the governor's residence for more than three centuries. The Casa Blanca (White House), also overlooking the water, was built for Ponce de León. However, the conquistador never lived there, as it was not completed until after he had sailed for Florida. Casa Blanca is now the residence of the general commanding the Puerto Rican Department of the United States Army.

In contrast to the landmarks of Spanish days are the buildings of the modern San Juan (illustration, page 6) which has grown up since the American occupation of 1898. Skyscrapers tower beside low arcaded buildings. From the tall top of a gleaming white bank building the face of a gigantic clock looks down on the roofs and dim patios of the old walled city. Clanging streetcars and lumbering buses wait for gaps in the bustling traffic to make their way through narrow streets where wrought-iron balconies jut almost within touching distance of each other.

Virgin Islands Complete 30 Years under American Flag

Dominating the rocky ridge of the island, about midway, rise the domed modern capitol of white marble, the federal building housing United States government offices, the American-Colonial-style Carnegie Library, and the School of Tropical Medicine. This institution is affiliated with the University of Puerto Rico and Columbia University in New York City. Its beautiful building of Spanish renaissance design was copied from a palace in Salamanca, Spain. On the south side of the little island are the busy harbor, the made-land airport, and the naval base.

The Virgin Islands, discovered and named by Columbus on his second voyage in 1493, were Danish from 1666 to 1917. After 50 years of dickering, the three main islands and 50 pin-point satellites, totalling 133 square miles, were finally bought by the United States for $25,000,000.

Charlotte Amalie (illustration, cover) was named for a Danish queen.

UMI

the original "Pyrrhic victory." Ioánnina, known for its fur trade, is a town of 20,000 bordering a six-mile mountain lake, and a regional center of rebel activity.

Of the four affected regions, only Thessaly lies entirely within Greece. South of Mt. Olympus between the Pindus Range and the Gulf of Salonika, it reaches to within 100 miles of Athens.

Thessaly consists of two connected, mountain-rimmed plains where peasants traditionally toil on vast, fertile estates for the rich landowners. Rebels have ranged around the market centers of the two plains—Lárisa, a town of 27,000 on the main Athens-Salonika route, and Tríkkala, a town of 19,000 people.

Over Greece as a whole, the rebels have tended to operate in rural areas and villages (illustration, page 2), while English troops and those of Greece's King George II have controlled the cities and larger towns and main communication lines.

NOTE: Greece appears on the National Geographic Society's map of Europe and the Near East. Write the Society's headquarters, Washington 6, D. C., for map list.

See also, "The Greek Way," "Greece—the Birthplace of Science and Free Speech," and "The Glory That Was Greece" (32 paintings in full color), in the *National Geographic Magazine* for March, 1944*; "Classic Greece Merges into 1941 News," January, 1941*; and "Modern Odyssey in Classic Lands," March, 1940. (*Issues marked with an asterisk are included in a special list of Magazines available to teachers in packets of ten for $1.00.*)

And, in the GEOGRAPHIC SCHOOL BULLETINS, October 21, 1946, see "Peaceful Folk Live in Greek Battle Area"; and "Crisis in Unhappy Greece Recalls Country's Turbulent History," April 1, 1946.

MAYNARD OWEN WILLIAMS

MACEDONIAN WOMEN PREPARE TO BAKE BREAD IN AN OUTDOOR OVEN

The land which under Alexander the Great ruled the Western world is today a province of farmers and villagers torn three ways by division among Greece, Yugoslavia, and Bulgaria. Here a barefoot crone stirs up a brushwood fire inside the stone and earth oven, while her helper stands by to put in the loaves (foreground). A corner of the wooden mixing bowl shows in the lower right-hand corner.

Olympic, Forest Primeval Preserved

PRIMEVAL wilderness, centered in gleaming, glacier-draped mountains, characterizes Olympic National Park. This unit of the national park system occupies the heart of the Olympic Peninsula, northwesternmost corner of the State of Washington. It is virtually a "last frontier," pushed to the extremity where the Strait of Juan de Fuca meets the Pacific Ocean. Puget Sound borders the peninsula on the east.

Many varieties of scenery are concentrated in the park's 1,300 square miles. Some of continental United States' largest glaciers move down the mountain sides. Of the more than 50 glaciers, one of the most beautiful is Blue Glacier, which colorfully lives up to its name.

Wild Flowers Bloom Beside the Ice Fields

Dense forests of Douglas fir, Sitka spruce, red cedar, hemlock, and pine remain in their primitive state. Some of the trees top 200 feet and have diameters of 18 or 20 feet.

Below glacier edges, sunny mountain meadows spread gay quilts of wild flowers. Gentian and larkspur repeat the hue of the sky, and goldenrod and buttercup blaze with yellow. Trillium, aster, and anemone add their varied colors. Rhododendron, spirea, and heather—white and pink—are massed with an effect a landscape gardener might envy.

The Olympic Mountains do not extend in a formal range. As though scattered by a super-giant's hand near the peninsula's center, they rise from moss-carpeted valleys to ice-crowned peaks, satellites of 8,000-foot Mt. Olympus (illustration, page 8). Many have not been explored or even named.

Over 3,000-foot cliffs is tossed the spray of glacier-born waterfalls. In melting, the glaciers send downward on all sides rushing streams that gouge out rocky canyons in their seaward journey. Some rivers flow west to the Pacific, others find Juan de Fuca on the north, and still others meander south and east and through wooded islands into Puget Sound.

Roosevelt Elk Still Lives on Its Native Heath

On the western slopes of the mountains grows a rain forest as wet and green as any the tropics can show. Rain clouds, warmed by the Japan current, strike the high Olympic Mountains. In the resultant heavy rainfall, trees and vines grow in tropic luxuriance. Vines entangle the branches of trees. Seedlings take root in fallen trunks, eventually to succeed these as forest giants. Thick moss carpets the ground.

Among the many varieties of animals roaming this wilderness are the cougar, coyote, black-tailed deer, black bear, wildcat, and the Roosevelt elk—native to the peninsula, but nearly extinct elsewhere. Also running are such small fry as the weasel, skunk, rabbit, beaver, mink, otter, marmot, and squirrel. Among the resident birds are the bald eagle, great horned owl, golden-horned kinglet, and red-shafted flicker.

Park policy has been to leave this wilderness region as nearly as possible in its primeval state. There are no roads except the approach spurs

UMI

From 1921 to 1937 it was officially called St. Thomas, after the island on which it stands. In 1937 the old Danish name was restored.

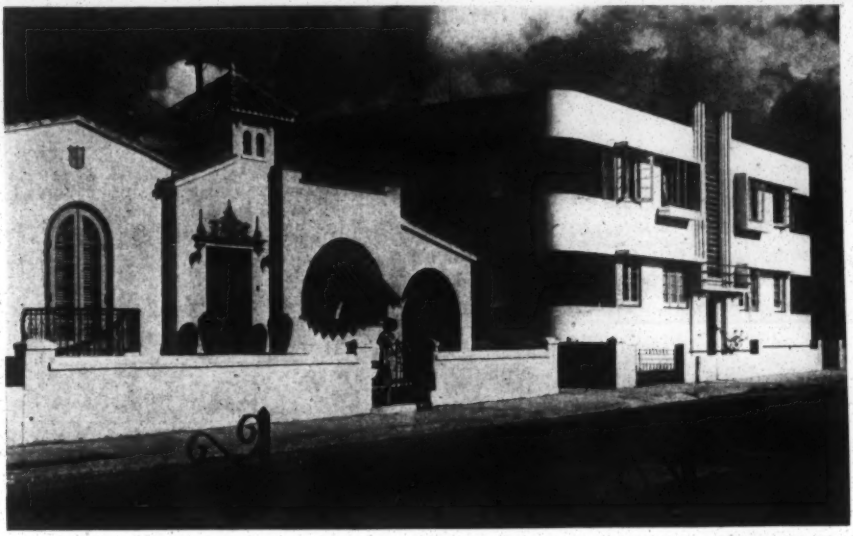
The little town spreads gracefully from five hilltops to the shores of an excellent natural harbor on the south coast of the island. On two of the hills rise ancient stone "castles" said to have been built by the pirates Bluebeard and Blackbeard. These picturesque towers are steeped in romantic but entirely fictitious legends of piracy.

The St. Thomas Bargain House, the High Tide Bar, and The Fancy Store, in spite of their names, present to the narrow main street—Dronningensgade—massive stone arched doorways, with no show windows, relics of Danish days. Heavy wooden shutters, designed as protection against hurricanes, fold back against the walls in the daytime.

In contrast to Puerto Rico where Spanish is generally spoken, English is the language of the Virgin Islands. Even under Denmark's rule a large part of the population was British, as many absentee Danish landowners employed Scottish and Irish plantation managers. An oddity in the motion picture theaters of Charlotte Amalie is the Spanish titles spread across the English-speaking pictures, because of the fact that San Juan is the distribution center for the area, and San Juan speaks Spanish.

NOTE: Puerto Rico and the Virgin Islands are shown on the Society's map of Mexico, Central America, and the West Indies.

See also, "The American Virgins," in the *Magazine*, September, 1940*; and "Puerto Rico: Watchdog of the Caribbean," December, 1939; and, in the GEOGRAPHIC SCHOOL BULLETINS, March 4, 1946, "Virgin Islands Progress from Pirates to Planned Economy"; "War-Born Caribbean Commission Continues Work in Peacetime," February 14, 1946; and "Uncle Sam's Puerto Rican Citizens Seek Greater Independence," November 19, 1945.



EDWIN L. WISHERD

SANTURCE, ONCE A SLAVES' REFUGE, BLOSSOMS INTO SAN JUAN'S MOST MODERN SUBURB

When San Juan spilled over onto the main island, Santurce became one of its handsomest suburbs. More than half San Juan's 186,000 people live in this area of such diverse dwellings as this modernistic apartment and the Spanish-style house at the left. Santurce's first settlers were runaway slaves from St. Croix to whom the Spanish governor gave sanctuary just outside the city walls.

New Opal Field Adds to Australia's Wealth

A NEW opal field has been discovered in South Australia. During the first six months of operation it produced more than $50,000 worth of gems. These valuable deposits may assure Australia's continued leadership in the production of the iridescent, semi-precious stones.

In ancient times the opal was believed to have qualities of magic. Many people consider the gem unlucky, but in spite of this prevalent superstition it is in wide demand for jewelry, and fire and black opals command high prices although they are not classed as precious stones.

The Opal Is Soft but Sometimes Fiery

In the 50 years before World War II, Australia mined more than $10,000,000 worth of opals. The yield of 1928 was outstanding. In that year gems weighing 790, 590, and 232 carats were found.

The opal is too soft to be cut in facets—the method by which the brilliance of such precious stones as the diamond and the ruby is brought out. It is therefore generally set "en cabochon"—its surface rounded and highly polished.

There are many varieties of opal but only a few are valuable. "Fire opals" are stones of orange or yellow color in which the characteristic iridescence, or "opalescence," gives the effect of living fire. These are rare and valuable, as are "black opals"—stones with a very dark background and vivid opalescence. Fine black opals are found at Lightning Ridge, New South Wales. A single stone from this region has brought as much as $5,000.

Production in the state of South Australia, scene of the new find, has been steadily increasing. Opals in the greatest quantity have been mined in the Coober Pedy field and at Andamooka, about 200 miles northwest of Port Augusta.

Discovered by prospectors, the Coober Pedy field is truly "down under." When the original miners swarmed to the site 40 years ago, their tents were blown down by great blasts of wind which swept across the desert. They hacked homes out of the soft sandstone of Stuart's Range. The only visible signs of the village, which has at times numbered as many as 400 miners, are little chimney pots which give the hills the appearance of volcanoes.

Opal Mining Is a Two-man Job

Fireplaces are cut into the rock in dwellings entered through narrow cuts into sloping hillsides. The early miners left ledges along the walls that served as beds, tables, and shelves. The village later acquired some tables, but boxes are used for seats. There are few real beds.

Miners work in pairs, sinking shafts to depths of 60 to 70 feet. One digs at the bottom of the shaft by candlelight, and fills a bucket which his partner hauls to the surface with a windlass. The partner then searches the sandstone chips and chalky dirt for opals.

A team of miners has made as much as $75,000 in a year; on the other hand, some work for a year and get nothing. Deserted mines have yielded

UMI

leading into the park from the encircling highway, and a twelve-mile stretch south of Lake Crescent where the highway runs through the park reservation. There are about 400 miles of trails. Rustic and winding, they have been kept to an 18-inch width except in locations where safety demands wider ones. Log bridges span the rivers. Placed conveniently along main trails are rustic cabins. Their split-spruce bunks and stone cooking fireplaces are in keeping with the general atmosphere of unspoiled wilderness.

The park is open all the year. Activities include swimming and boating on Lake Crescent in summer, and fishing, for which a license may be purchased. In winter glistening snowfields are an attraction for skiers and snowshoers.

The park was dedicated June 15, 1946. Headquarters is at Port Angeles. There are several hotels and lodges inside the park. Groups of housekeeping cabins have swimming pools in addition to the usual camp facilities. There are campgrounds with fireplaces, water, and picnic tables, and with cooking shelters for use in rainy weather.

Olympic National Park may be reached by ferry from Seattle, and from Victoria, and by a modern highway from Olympia.

NOTE: Olympic National Park appears on the Society's map of Northwestern United States.

U. S. NATIONAL PARK SERVICE

CLOUD-VEILED MT. OLYMPUS REIGNS AS KING OF THE OLYMPIC RANGE

Visitors to Olympic National Park view the monarch of the rugged park range from "grandstand seats" on the banks of Seattle Creek. Magnificent stands of timber climb nearly 5,000 feet up the slopes. Where they end, flowered meadows merge forest and rocky summit in a hand of bright color. In deep-gouged crevices above the timber line, unmelting snow patches mark white designs.

Sports Have Influenced England's Victories

IT WAS front-page news in Great Britain when the Marylebone Cricket Club, the organization which governs the national sport, announced the first important change in the rules since 1788.

Cricket has been played for more than 600 years. It is a popular sport with schoolboys (illustration, page 12), amateur clubs, and professionals alike. So great has been its influence in the development of the youth of Britain that it prompted the remark (attributed to the Duke of Wellington) that "the Battle of Waterloo was won on the playing fields of Eton."

Archers Won Early Victories for England

Great Britain is among the most sports-minded of nations, and several athletic contests besides cricket have originated or developed there. Among the earliest of English spectacles were the jousts, or tournaments, in which knights on horseback tilted lances.

If cricket can be said to have influenced the result of a 19th century battle, it could be pointed out that another popular sport—archery—had an effect on equally important English victories in earlier times. From the reign of Edward I to that of Queen Elizabeth, all English boys were required by law to practice with the bow and arrow. It was chiefly due to the skill of the English archers that the Battle of Crécy established England's military supremacy on the European continent in 1346. Nearly three-quarters of a century later, men equally valorous with the longbow —Henry V's archers—were the decisive factor in winning the Battle of Agincourt.

Tennis in some form descended on England from France not later than the 14th century. At that time Chaucer wrote, "But canstow pleyen raket to and fro?" Henry VIII was a tennis enthusiast and installed courts on the grounds of Whitehall Palace in London.

Henry also set up a bowling green, but, like his predecessors, forbade bowling because its popularity was thought to interfere with the more important archery.

A Prioress Wrote on Fishing Before Izaak Walton

The first football game in England took place in 1710, but football play dates back at least six centuries. A writer in 1531 criticized the sport as nothing but "beastly fury and extreme violence." Until the organization of Rugby football in the last century, the English version of the game consisted entirely of kicking the ball.

Izaak Walton's *The Compleat Angler*, published in 1653, indicates an early English interest in fishing. An even earlier work on the sport—*The Boke of Haukyng, Huntynge, and Fysshyng*—appeared in 1486. Its author was not a sportsman but a prioress, Dame Juliana Berners.

Hawking, or falconry, which has long been popular in Scotland, was revived in England early in the present century. The sport is older than written records. It is known to have been practiced generally in Saxon England before 875.

Of Scottish birth, curling is a game that began 400 to 500 years ago.

UMI

$5,000 worth of opals not two feet below the point where discouraged miners had stopped digging.

Food for Coober Pedy must be hauled 200 miles across the desert from Kingoonya on the East-West Railway. The mail carrier usually transports supplies; the village post office and bank share a dugout. Water, scarce in this arid, below-sea-level region, must be carted long distances.

Andamooka, with possibly 50 residents, is a similar mining town. There the miners live in cellars dug into the earth, walled with stone, covered over with logs on which dirt is piled. Andamooka has one advantage over Coober Pedy—a well.

Long before gems were mined in Australia, the necessary metal for their settings was at hand. For nearly a century Australia has produced gold. In 1851, two years after its discovery in California, an Australian —Edward Hargraves—who had joined the rush to California, discovered the precious metal in the rocks of his own state, New South Wales. He had noted their resemblance to those of the California gold fields.

Forty years later two miners, looking for their lost horses, discovered gold in Western Australia which put Kalgoorlie (illustration, below) on the map and brought the railroad to the isolated desert region.

NOTE: Regions where Australia's opals and gold are mined may be located on the Society's map of the Pacific Ocean.

See also, "Beyond Australia's Cities" in the *Magazine* for December, 1936.

W. ROBERT MOORE

GOLD MINE TAILINGS AT KALGOORLIE MAKE THEIR OWN RETAINING WALL

Men helps by continuously keeping the wall built up a foot or so above the general level of the dump. Countless shovel marks give the facing the appearance of masonry. Like concrete, the pulverized stone left over from the gold extracting operation is dark and soft when wet, white and hard when dry. The water will run off to be used again.

It is played on ice, with flat spheroids of granite, most of which come from a small island in the Firth of Clyde.

Golf seems to have originated in northern Europe, rather than in Scotland, which usually gets the credit. By the 15th century, however, the game had attained such vogue in Scotland that it—like bowling—threatened cherished archery, and was classed by James IV with "futeball" and other "unprofitabll sportis." However, in spite of his public criticism, James himself played golf.

Eight centuries ago, before skates were known, boys on the frozen fens north of London tied "bones to their feet and under their heels; and shoving themselves by a little picked staff, do slide as swiftly as a bird flieth in the air, or an arrow out of a cross-bow."

Bull- and bear-baiting continued from the 12th century through the days of Shakespeare in an arena near the Globe Theater, across the Thames from the City of London. In the 12th century, too, horse racing took place in Smithfield, just northwest of the London wall, where a horse market was held.

Jack Broughton, English "father of boxing" as practiced today, is believed to have invented the modern boxing glove, and divided bouts into rounds. Even the "dance marathon" might be traced to England. In 1600, William Kemp, "Head Master of Morrice Dancers," danced from London to Norwich, a distance of more than 100 miles by road.

B. ANTHONY STEWART

ON ONE OF THE OLDEST ATHLETIC FIELDS IN ENGLAND, WINCHESTER COLLEGE MEN PLAY CRICKET

Britain's national game has superficial resemblances to baseball. A bowler (pitcher) delivers the ball toward the batsman (batter) who is backed by a wicket and wicket-keeper (catcher). Fielders are scattered about, even behind the batsman. Umpires wear dusters and black trousers.